http://www.aflma.hq.af.mil/lgj/Afjlhome.html

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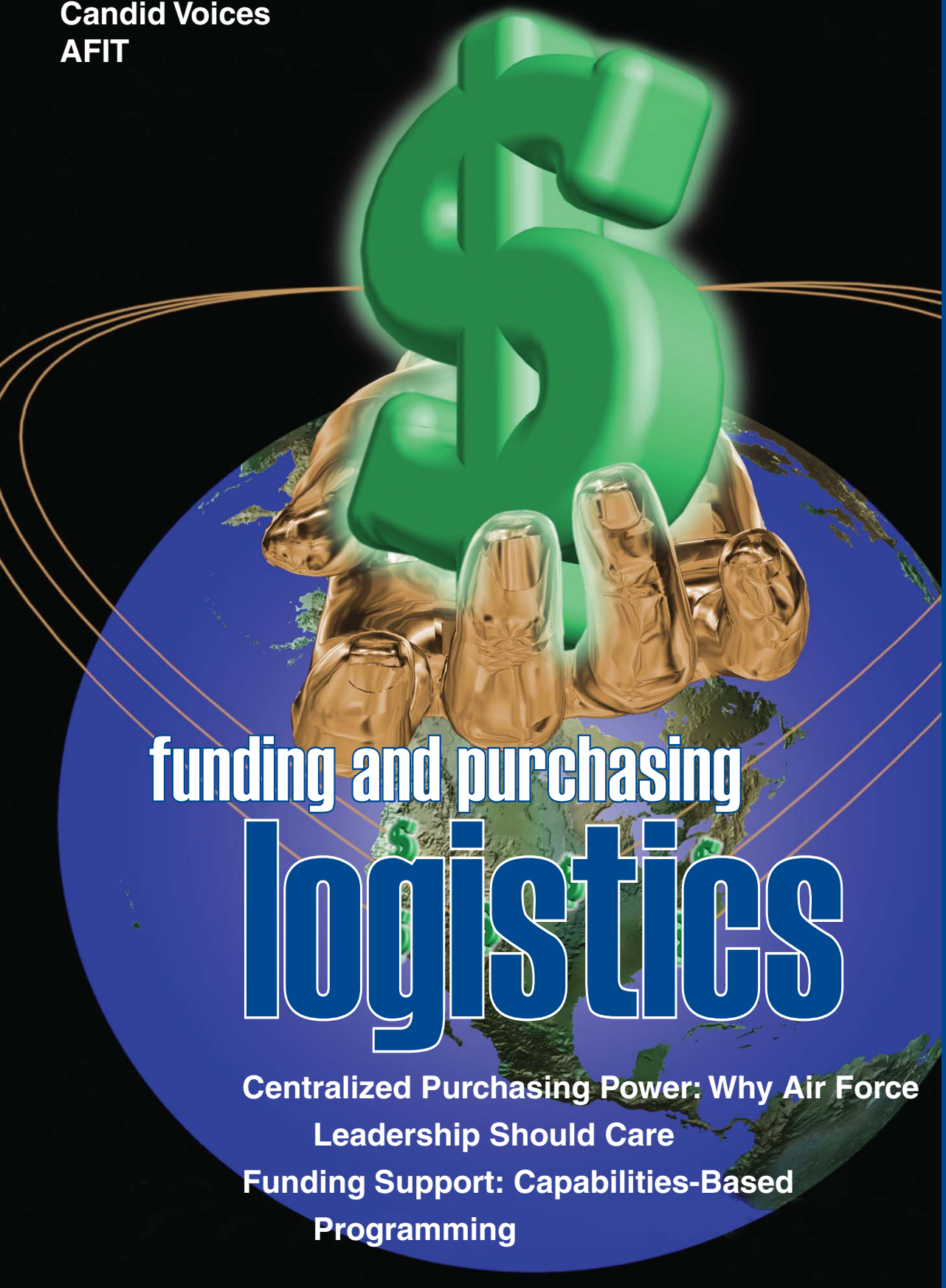

funding and purchasing logistics

Centralized Purchasing Power: Why Air Force Leadership Should Care

Funding Support: Capabilities-Based Programming

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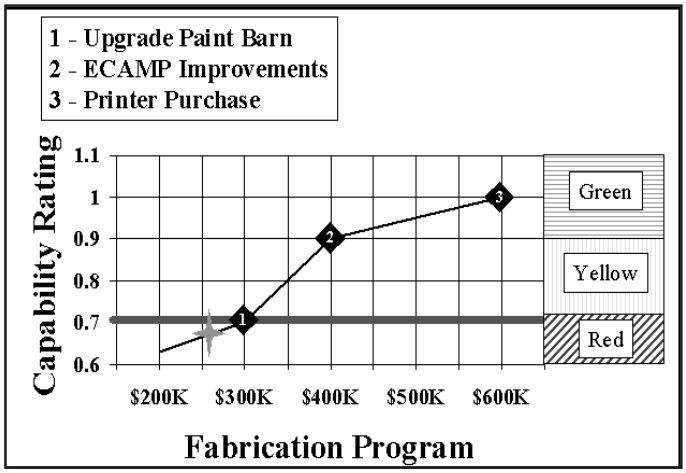

Figure 19. RAM Performance Value Assessment—ART Based

can be assigned to each capability measure on a one-to-one basis with the reported color-coded assessment. Similar to the peacetime requirements, specific program element code and PM-based capability profiles can be developed to highlight which squadron, flight, or section is driving the lowered rating (Figures 11 through 13) ending with submission through the RAPIDS process to fill capability and funding shortfalls (Figure 19).

Conclusions

The answer to the question "Can a method be developed to assist squadron and group logistics commanders to secure required mission funding" is an emphatic yes. Squadrons and groups must invest time and thought to compete effectively for funding resources at the MAJCOM, Air Force, and DoD levels. In other words, they spend the *time* to determine the requirements necessary to support the peacetime and wartime missions as well as the *thought* in applying the financial resources in a traceable manner. The key is to establish the fundamental requirements supporting the peacetime and wartime missions. When established, the requirements clarify not only the shortfalls identified from the logistics perspective but also mission impact to senior leadership. Once leadership understands the implications to the mission, more effective prioritization of resources throughout the unit is achieved more easily.

All the resources and processes for determining requirements, shortfalls, and a way ahead are available. DOCs (or the means to create them), analysis (from the Analysis section), readiness reporting (through SORTS or ART), funding requests (through the POM or other means), and traceability (to track effectiveness and seek further funding) combine to form an effective budget justification system. This is available to any commander who is ready to take resource management to a higher level and fund the first priority of the position: organize, train, and equip.

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notable quotes

Character is what you are. Reputation is what others think you are. The reason that some fail to climb the ladder of success, or of leadership if you want to call it that, is that there is a difference between reputation and character. The two do not always coincide. A man may be considered to have sterling character. Opportunity might come to that man; but if he has the reputation for something he is not, he may fail that opportunity. I think character is the foundation of successful leadership.

—Major General Lucien Truscott

Although the Department of Defense (DoD) has made great strides in improving the visibility of its cargo and equipment since the days of Operation Desert Storm, the DoD continues to struggle with providing efficient and effective intransit visibility (ITV) to the warfighters.

contemporary issues

Comparing ERP Supply-Chain Management Solutions

In "Comparing EPR Supply-Chain Management Solutions" the authors identify commercially available ERP-based logistics software packages and determine whether they are capable of providing the same functionality as the two Air Force transportation information systems currently employed. Information on the logistics software provided by SAP, Oracle, and PeopleSoft was collected and a gap analysis was conducted to identify the degree of similarity between the Air Force and commercial systems. The results of the research indicate SAP provides the highest percentage of similarity with each of the Air Force systems, followed by Oracle and then PeopleSoft. Although all three software packages provide a substantial number of functions found in Global Air Transportation Execution System and Cargo Movement Operations System, none of the systems offers 100 percent of the transportation functions provided by the current Air Force systems.

The article demonstrates COTS enterprise solutions exist that may be applicable to Air Force logistics processes and may provide a feasible approach toward achieving a single, integrated logistics information system. Furthermore, the results may serve as a useful foundation for AFLMA's 8-year project, which is intended to determine the information needs of the Air Force logistics community before adopting a commercially provided ERP system.

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Comparing ERP Supply-Chain Management Solutions

Captain Patrick S. Holland, USAF
Major Kirk A. Patterson, USAF
William A. Cunningham III, PhD

Introduction

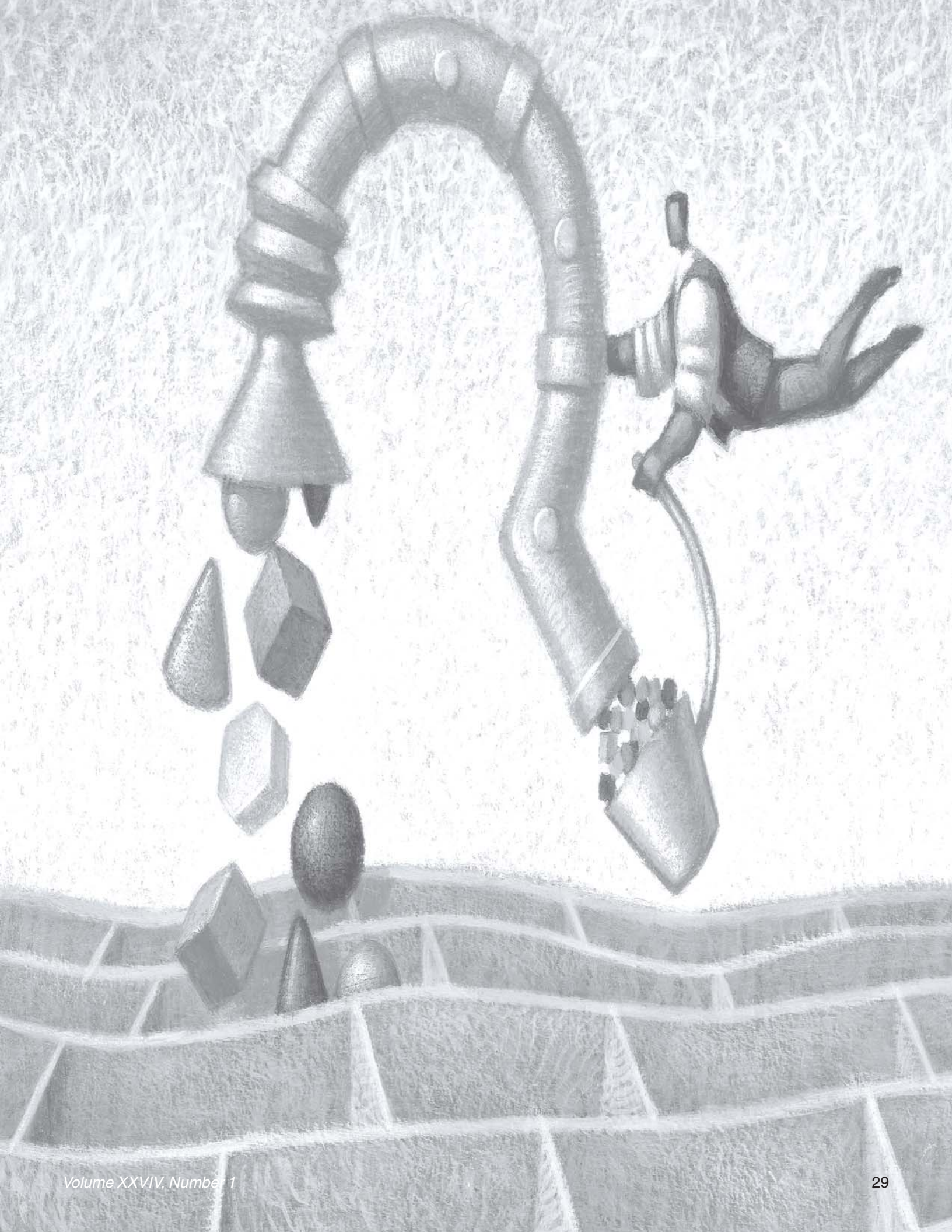
During the 1991 Gulf War, more than 40,000 containers of supplies and equipment were shipped to the Persian Gulf with inadequate markings, labels, and identification. No one could identify the contents of each container or to whom the contents belonged. The only solution was to open and inventory each container to determine the proper disposition of the items.[1] When the war ended, the US military still had 8,000 containers that remained unopened that later were found to contain spare parts worth $2.7B.[2] This lack of cargo visibility caused warfighters to place thousands of duplicate requisitions just to ensure they had items needed to accomplish daily operations.[3] These requisitions slowed down the logistics pipeline and eventually caused a congestion of backlogged cargo at the stateside aerial ports.[4] These problems further added to the frustration of not being able to account for assets within the theater of operations.

Although the Department of Defense (DoD) has made great strides in improving the visibility of its cargo and equipment since the days of Operation Desert Storm, the DoD continues to struggle with providing efficient and effective intransit visibility (ITV) to the warfighters. In a preliminary report, the General Accounting Office (GAO) stated, "DoD did not have adequate visibility over all equipment and supplies transported to, within, and from the theater of operations in support of Operation Iraqi Freedom."[5] The report also noted:

> Units operating in the theater did not have adequate access to, or could not fully use, DoD's logistics and asset visibility systems in order to track equipment and supplies because these systems were not fully interoperable and capable of exchanging information or transmitting data over required distances.[6]

The Joint Center for Lessons Learned also reported numerous logistics problems during Iraqi Freedom, such as inadequate asset visibility, inconsistent logistics communication and interoperability, inadequate training on various logistics information systems, and the frequent occurrence of *pushing* supplies through the system because of asset visibility problems.[7] Additional evidence of continued ITV difficulties is that the US Transportation Command (TRANSCOM), Air Mobility Command (AMC), and Air Force Materiel Command all found it necessary to set up ITV cells during Iraqi Freedom to assist in locating and tracking mission critical cargo.[8]

One of the primary reasons the DoD lacks system interoperability and information exchange is because some organizations continue to rely on stovepiped legacy information systems that lack robust and dynamic data-integration capabilities.[9] For example, the Air Force continues to use two separate legacy information systems to maintain intransit visibility of DoD cargo and personnel even though, in 1994, the DoD issued a memo emphasizing the use of commercial-off-the-shelf (COTS) products because of the private sector's ability to provide better technology for integrating information systems.[10]



The purpose of this exploratory study was to examine whether commercial Enterprise Resource Planning (ERP) software packages are capable of providing the same functionality as two primary transportation information systems currently used by the Air Force to support ITV: the Cargo Movement Operations System (CMOS) and Global Air Transportation Execution System (GATES). In a previous comparison of GATES and CMOS, 290 transportation functions were identified and used as a baseline to compare software functionality between the Air Force systems and three commercially available ERP software packages.[11]

Air Force Information Management Systems and Intransit Visibility

The Air Force primarily relies on two transportation information management systems to process cargo and passengers through the Defense Transportation System (DTS): CMOS and GATES.[12] Both systems have evolved from legacy systems created during the 1980s and continue to supply the information needed to manage cargo and passenger movements and maintain intransit visibility.

Developed in the mid-1980s and achieving full operational capability 1 January 1995, CMOS is a "combat support system that provides automated base-level processing for *cargo movements during peacetime* and for both…*cargo and passenger movements during contingencies* [emphasis added]."[13] In January 2002, CMOS was approved by the Joint Transportation Management Board to become the Joint Installation Transportation Officer/Transportation Management Office module of the Transportation Coordinator's Automated Information for Movement System II.[14] This recognition was a major milestone for the program because it meant CMOS was recognized officially throughout DoD as the system responsible for supporting the joint transportation requirements for each of the service branches.[15] CMOS currently is used at 206 locations worldwide, including nine Marine locations, six Navy locations, and one National Security Agency location.[16]

CMOS supports ITV by electronically sending cargo and passenger data to the Global Transportation Network (GTN). GTN is TRANSCOM's customer-focused, automated information system that provides near real-time visibility for all cargo shipped throughout the DTS.[17] Since its inception in August 1989, GTN has evolved from a software-installed application to a Web-based ITV tool capable of being accessed by anyone who has a valid need and has received permission to use the system.[18] The system's strength comes from its ability to operate in a shared data environment and access transportation data from 25 government and 50 commercial logistics information systems.[19] Figure 1 represents the various information systems that feed data into the GTN system.

CMOS also enables ITV by transmitting advance shipping notices to other CMOS locations. Once a shipment arrives at a receiving location, freight personnel can quickly in-check the cargo because the shipment data are already in the system. This helps maintain data accuracy and allows the shipment information to be updated more efficiently.[21]

GATES is:

> Air Mobility Command's aerial port operations and management information system designed to support automated cargo and passenger processing, the reporting of intransit visibility data to the Global Transportation Network, and billing to Air Mobility Command's financial management directorate.[22]

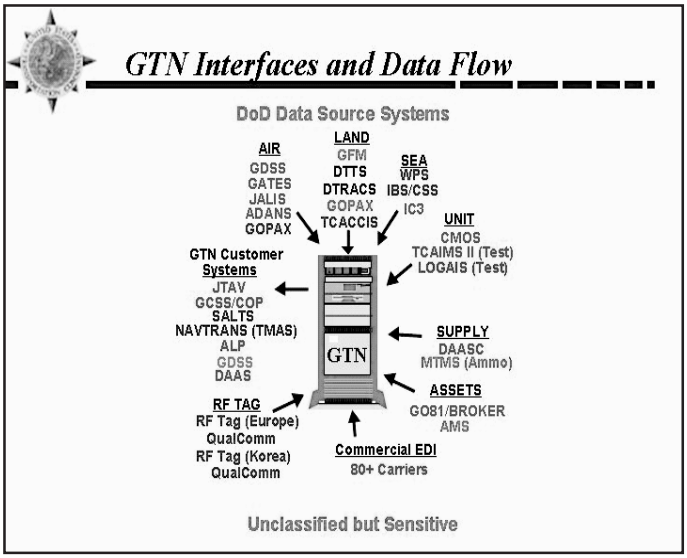


Figure 1. GTN Interfaces and Data Flow[20]

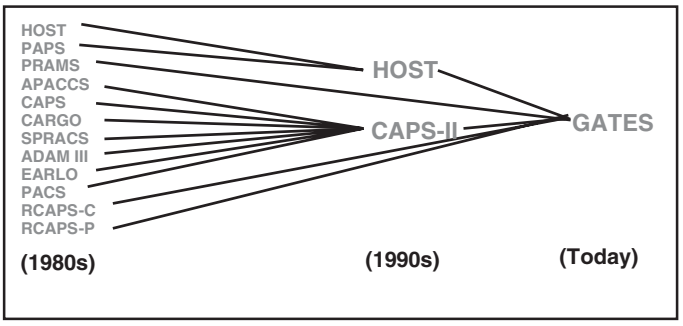


Figure 2. AMC's Migrated Transportation Systems[26]

GATES has evolved from a series of AMC legacy transportation systems and is intended to support TRANSCOM's DTS 2010 Integration Plan by being a fully integrated transportation information system for AMC (Figure 2). Currently, the system has more than 10,000 active users and is located at 20 major aerial ports.[23] RGATES (Remote Global Air Transportation Execution System) is AMC's stand-alone version of GATES and carries the same functionality except that the system is capable of running off a regular PC desktop or laptop.[24] RGATES is being used at 28 sites throughout the world.[25]

In July 2001, the Air Force Logistics Management Agency (AFLMA) was tasked to examine these two systems because of the apparent overlap of functions. The overall objective of the study was to find a way to maintain the same functionality required for processing cargo and passengers through the DTS while eliminating duplication of effort between the two systems.[27] The study identified 11 functional areas and 290 transportation functions between the two systems. Captain John W. Winkler, AFLMA Project Manager, noted 153 of the 290 functions (53 percent) were similar.

AFLMA's study pointed out several problems with operating and maintaining the two information systems. First, many transportation persons use one system for peacetime operations while having to use another system during contingencies. Traffic

management personnel (2T0XX) use CMOS during peacetime operations but rarely use the CMOS deployment module. However, air-transportation personnel (2T2XX)—approximately 80 percent are assigned to AMC—use GATES on a routine basis but are required to use CMOS during deployment exercises and real-world contingencies.[28] The report notes, "This presents a significant training problem for 2T2XX personnel, especially at aerial ports, since they use CMOS only for Air Force deployments, usually only once or twice a quarter."[29] Furthermore, Winkler points out, "This situation is exacerbated since the CMOS deployment module is not taught in either 2T2 or 2T0 3-level technical training courses; training is left up to individual bases."[30] This makes it difficult for air-transportation personnel to become proficient in using both systems.

AFLMA also noted two major obstacles to integrating data between the two systems. First is the "dissimilarity in systems communication."[31] The information systems are unable to exchange information or data directly with each other, and thus, cargo and passenger data must be manually input into either system even though they may already exist in the other. As noted in the study, "This results in duplication of effort for transportation personnel to maintain intransit visibility of cargo and passengers."[32] Therefore, AFLMA concluded:

> Preliminary study demonstrates the need for greater data integration; recommend accomplishment of this by leveraging Electronic Data Interchange technology or other exchange technology to integrate data as if GATES and CMOS were a single system.[33]

In a followup study, AFLMA identified the lack of policy guidance as the second major obstacle to data integration.[34] This study recognized that although the "processes for sustainment, deployment, and redeployment are generally the same, policy does not provide sufficient guidance to ensure efficient data exchange to manage and maintain visibility over cargo and passengers."[35] Thus, AFLMA recommended implementing policy guidance changes, as well as adopting data-sharing technologies to improve system integration.

Comparisons

In this study, the 290 functions of CMOS and GATES were compared with functions provided by the three largest software suppliers of ERP-based supply chain management (SCM) solutions. The three largest companies—SAP, Oracle, and PeopleSoft—were included, as it was believed these companies would have the resources and experience necessary to provide and implement a cargo and passenger processing system on a large scale as required by the Air Force.[36] Since the conclusion of this study, Oracle bought PeopleSoft for $10.3B, making it the second largest business-management software company in the world.[37]

Data were collected from documents and interviews. A gap analysis then was used to identify the similarities and differences between the transportation information management systems. Gap analysis is "a technique designed to assess the gap that can exist between a service that is offered and customer expectations."[38] Although this technique usually is associated with analyzing surveys, gap analysis also can be applied in comparing functionality between two systems.[39]

The AFLMA study categorized the CMOS and GATES functions into 11 functional areas. Table 1 presents these categories and the capabilities supplied by the three commercial packages. All three vendors provide complete coverage of 7 of the 11 functional areas. The four functional areas with limited support are discussed in detail below.

Functional Areas	SAP	Oracle	PeopleSoft
System Administration	C	C	C
Surface Cargo Processing	C	C	C
Air Cargo Processing	C	C	C
Automated Identification Technology	85.7	88.1	0
Deployment Management	100	25	12
Passenger Processing	88.1	0	0
Resource Management	C	C	C
Decision Support	C	C	C
System Communication	C	C	C
World Wide Web	53.8	7.7	23.1
Mission Status	C	C	C
Note: C represents a complete capability provided by software vendor.			

Table 1. Percentages of Functionality Provided by Commercial Software Packages

Detailed examination of the data reveals PeopleSoft currently does not provide any of the functionality required for automated identification technology, while SAP and Oracle provide roughly 86 and 88 percent respectively. The project manager of logistics for PeopleSoft reported they are working to provide the automated identification technology within the next 12 months.[40] SAP is able to provide 100 percent of the deployment functions contained in the Air Force systems. Once again, Oracle and PeopleSoft information packages fall substantially short of SAP. The results indicate Oracle and PeopleSoft provide no more than 25 percent of the functions currently being used by the Air Force with its own systems. During an interview with PeopleSoft's project manager for logistics, he admitted that, because of the dynamic nature of military deployments, the current version of its logistics information software would probably be unable to meet the demanding requirements.[41]

With respect to the passenger-processing function, both Oracle and PeopleSoft are unable to perform any of the current passenger-processing functions of CMOS and GATES. In contrast, SAP has more than 88-percent functional similarity with the Air Force combined systems (Table 1). Even though Oracle does not provide passenger-processing functionality itself, it does have partnerships established with other companies that are capable of providing that functionality. For example, under Oracle's Partner Network Solutions Catalog, Ultra Electronics Limited provides the technology for a flight-information display system.[42] The company also is capable of setting up a baggage reconciliation system to manage and track baggage security.[43] However, researching the functions that business partners can provide was beyond the scope of this article.

The final area of limited support was World Wide Web functionality. Surprisingly, none of the packages was able to provide 100-percent support. SAP once again provides the most support with roughly 54-percent similarity. Oracle and PeopleSoft provide less than 25 percent of the Web-based transportation functions of GATES and CMOS.

(Continued on page 46)

the end goals in the Global War on Terrorism. On one hand, if CBM+ is an approach to decrease Mx personnel and minimize troubleshooting R&R to the least value afforded by whiz-bang technology, then the present strategy seems very workable and probably cost-effective, given the dearth of funds committed to implement CBM+. On the other hand, if the alternative approach of focusing on *failure consequences* is adopted, thereby enlarging responsibilities of the Air Force Mx personnel, then clearly a large deviation from the present CBM+ implementation path must be adopted. The former is attainable at definable costs in the short term. The latter is attainable at variable costs in the longer term. Such results depend on actions implemented by Air Force senior level decisionmakers and shakers—and continuity of the same.

Here's hoping that they are listening to the forthcoming debate that this article is designed to encourage.

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Mr Hale is the GS 0801 RCM Course Director, AFIT School of Professional Continuing Education, Wright-Patterson AFB, Ohio.

("Comparing ERP Supply-Chain Management Solutions" continued from page 30)

The overall percentages of functional similarity between the commercial and Air Force systems are presented in Table 2. Based on the data collected, all three commercial packages are capable of performing a majority of the 290 GATES and CMOS transportation functions. However, SAP has the highest percentage of similarity with CMOS, GATES, and an Air Force combined system. Oracle was identified as having the second highest degree of similarity followed by PeopleSoft.

To summarize, SAP has the highest percentage of similarity with the Air Force systems out of the three commercial software packages evaluated in this study. Although SAP is unable to achieve 100-percent functional similarity, it is the only package that has at least some degree of similarity in all 11 functional areas and scored the highest in percentage overlap with the Air Force software packages. Therefore, based on this initial study, it seems that SAP would be the best candidate of the three if the Air Force chooses to adopt a commercially provided ERP SCM system.

	CMOS	GATES	Air Force
SAP	95.45%	90.95%	90.69%
Oracle	89.39%	73.25%	74.48%
PeopleSoft	71.21%	60.49%	63.45%

Table 2. Percentages of Overall Functional Similarity

Conclusion

The purpose of this research was to identify commercially available ERP-based logistics software packages and determine whether they are capable of providing the same functionality as the two Air Force transportation information systems currently employed. Information on the logistics software provided by SAP, Oracle, and PeopleSoft was collected and a gap analysis was conducted to identify the degree of similarity between the Air Force and commercial systems. The results of the research indicate SAP provides the highest percentage of similarity with each of the Air Force systems, followed by Oracle and then PeopleSoft. Although all three software packages provide a substantial number of functions found in GATES and CMOS, none of the systems offers 100 percent of the transportation functions provided by the current Air Force systems.

As with all studies, several limitations were encountered during the research. First, the 290 transportation functions of GATES and CMOS were used as a baseline and compared with the commercial software packages. This study did not consider whether the commercial software could provide additional functionality that might be beneficial to the Air Force. Another consideration is that the 290 transportation functions identified as the baseline for the study were collected from AFLMA's 2001 study.[44] Although contact was made with each system's program management office to verify that all the functions were still current, the system contractors could be creating new or updated functionality that could change the results of subsequent studies. Third, the authors occasionally had to use professional judgment and experience when deciding whether a specific software package could perform a certain transportation function. For example, one function within surface cargo processing is the ability to generate human remains messages. Although PeopleSoft might not have a function that specifically states "human remains messages," it does have a message-generating capability. Since the company is able to provide the functionality, all it would need to do is customize the program to meet the Air Force's specific needs. Finally, only three commercial logistics software packages from the largest providers were included in this study. By incorporating more companies that offer logistics software packages, the authors may have found software packages providing more functional overlap than these three.

This study demonstrates COTS enterprise solutions exist that may be applicable to Air Force logistics processes and may provide a feasible approach toward achieving a single, integrated logistics information system. Furthermore, the results may serve as a useful foundation for AFLMA's 8-year project, which is intended to determine the information needs of the Air Force

logistics community before adopting a commercially provided ERP system.[45]

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